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| 09/846,658 | 05/01/2001 | Masayuki Kitagawa | MITUM21.001AUS | 4554 |

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KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

| EXAMINER | |
|---|---|
| LE, KIMLIEN T | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2653 | 5 |

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Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. 09/846,658 | Applicant(s) KITAGAWA, MASAYUKI | |
|---|---|---|---|
| | Examiner Kimlien T Le | Art Unit 2653 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *31 August 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

*Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-4, 6-14 and 16-27 are rejected under 35 U.S.C. 102(e ) as being anticipated by Takeshita (U.S. Patent 6,556,524).

Regarding claim 1, see Figs. 1, 2 and 3 of Takeshita which show an optical drive system, the optical drive system adapted to write data at a substantially linear density on an optical disc, the optical drive system further adapted to set a linear velocity prior to writing to the optical drive to reduce a likelihood of a buffer under-run condition, the optical drive system, comprising: a spindle (Fig. 1, elements 20 and 24; See also column 5, lines 45-50) adapted to rotate the optical disc and control a rotational speed of the optical disc; an optical pick-up (Fig. 1, element 22; See also column 5, lines 45-50) adapted to write data to the optical disc; and a controller (Fig. 1, element 40; See also column 6, lines 9-30) adapted to communicate with a host device (Fig. 1, element 14; See also column 6, lines 9-30), wherein the controller receives a communication link transfer speed between the host device and the controller, and wherein the controller determines a preferred recording speed.

Regarding claim 2, see Figs. 1, 2 and 3 of Takeshita which show an optical drive as defined in Claim 1, wherein the controller (Fig. 1, element 40; See also column 6, lines 9-30) receives data to be written to the disc.

Regarding claim 3, see Figs. 1, 2 and 3 of Takeshita which show an optical drive as defined in Claim 1, wherein the controller (Fig. 1, element 40; See also column 6, lines 9-30) communicates with the optical pick-up to transmit the data to the disc.

Regarding claim 4, see Figs. 1, 2 and 3 of Takeshita which show an optical drive as defined in Claim 1, wherein the controller (Fig. 1, element 40; See also column 6, lines 9-30) controls the rotational speed of the spindle.

Regarding claim 6, see Figs. 1, 2 and 3 of Takeshita which show an ptical drive as defined in Claim 1, further comprising a volatile memory buffer (Fig. 1, element 26; See also column 5, lines 55-60), in communication with the controller, to store the preferred recording speed.

Regarding claim 7, see Figs. 1, 2 and 3 of Takeshita which show an optical drive as defined in Claim 1, wherein in response to the preferred recording speed slower than the maximum recording speed, the controller (Fig. 1, element 40; See also column 6, lines 9-30) sets the rotational speed of the spindle such that the linear velocity of the position on the optical disc adjacent to the optical pick-up is slower than the maximum recording speed.

Regarding claim 8, see Figs. 1, 2 and 3 of Takeshita which show an optical drive as defined in Claim 1, wherein the controller (Fig. 1, element 40; See also column 6, lines 9-30) provides the preferred recording speed to the host device.

Regarding claim 9, see Figs. 1, 2 and 3 of Takeshita which show an optical drive as defined in Claim 8, wherein the host device (Fig. 1, element 14; See also column 6, lines 9-30) sets a linear velocity for optical disc recording.

Regarding claim 10, see Figs. 1, 2 and 3 of Takeshita which show an optical drive as defined in Claim 1, wherein the optical disc corresponds to a recordable compact disc format ( Fig. 1, element 8; See also column 5, lines 42-45), and wherein the controller (Fig. 1, element 40; See also column 6, lines 9-30) controls the linear velocity such that a minimum linear velocity corresponds to a 1X speed.

Regarding claim 11, see Figs. 1, 2 and 3 of Takeshita which show an optical drive as defined in Claim 1, wherein the optical disc corresponds to a recordable compact disc format ( Fig. 1, element 8; See also column 5, lines 42-45), and wherein the controller (Fig. 1, element 40; See also column 6, lines 9-30) controls the linear velocity such that a minimum linear velocity corresponds to a 0.5X speed.

Regarding claim 12, see Figs. 1, 2 and 3 of Takeshita which show an optical drive as defined in Claim 10, wherein the controller (Fig. 1, element 40; See also column 6, lines 9-30) maintains the minimum linear velocity limit such that the angular velocity of the spindle does not fall below a preset limit.

Regarding claim 13, see Figs. 1, 2 and 3 of Takeshita which show an optical drive as defined in Claim 11, wherein the controller (Fig. 1, element 40; See also column 6, lines 9-30) maintains the minimum linear velocity limit such that the angular velocity of the spindle does not fall below a preset limit.

Regarding claim 14, see Figs. 1, 2 and 3 of Takeshita which show a method of writing data to an optical disc, comprising: receiving data to be written to the optical disc from a host device (Fig. 1, element 14; See also column 6, lines 9-30); storing data to be written to the optical disc in a memory buffer (Fig. 1, element 26; See also column 5, lines 55-60); writing data from the memory buffer to the optical disc in a continuous write sequence at a substantially constant linear density; detecting a communication link transfer speed slower than the optical drive maximum recording speed; and changing a linear velocity of the optical disc in response to the communication link transfer speed prior to writing to the optical disc so as to reduce the likelihood of a buffer under-run (Fig. 2; column 5, lines 30-65).

Regarding claim 16, see Figs. 1, 2 and 3 of Takeshita which show a method as defined in Claim 15, further comprising determining the preferred recording speed as the slower of the communication link transfer speed between the host device and the controller, and the optical drive maximum recording speed (Fig. 2; column 5, lines 30-65).

Regarding claim 17, see Figs. 1, 2 and 3 of Takeshita which show a method as defined in Claim 16, further comprising storing the preferred recording speed in a volatile memory (Fig. 1, element 26; See also column 5, lines 55-60) in the optical drive (Fig. 1, element 16; See also column 5, lines 55-60).

Regarding claim 18, see Figs. 1, 2 and 3 of Takeshita which show a method as defined in Claim 17, further comprising the host device (Fig. 1, element 14; See also column 6, lines 9-30) retrieving the preferred recording speed from the controller (Fig. 1, element 14; See also column 6, lines 9-30).

Regarding claim 19, see Figs. 1, 2 and 3 of Takeshita which show a method as defined in Claim 18, further comprising the host device (Fig. 1, element 14; See also column 6, lines 9-30) commanding the controller to select a linear velocity.

Regarding claim 20, see Figs. 1, 2 and 3 of Takeshita which show an optical drive system, the optical drive system adapted to write data on an optical disc and set a linear velocity prior to writing to the optical drive, the optical drive system comprising: a control circuit (Fig. 1, element 14; See also column 6, lines 9-30) adapted to receive data to be written to the optical disc (Fig. 1, element 18; See also column 6, lines 9-30) from a host device (Fig. 1, element 14; See also column 6, lines 9-30); a buffer (Fig. 1, element 26; See also column 5, lines 55-60) adapted to store data received by the control circuit; a writing circuit adapted to retrieve data from the buffer, wherein the writing circuit writes the data from the buffer as a series of pulses recorded on the optical disc in a continuous write sequence at a substantially constant linear density; a preferred recording speed module adapted to detect a condition of a communication link transfer speed slower than the optical drive maximum recording speed; and a writing speed circuit adapted to control a rate at which the writing circuit records to the optical disc, wherein the writing circuit sets a linear velocity of the optical disc in response to the detected condition prior to writing to the optical disc so as to reduce the likelihood of a buffer under-run (Fig. 2; column 5, lines 30-65).

Regarding claim 21, see Figs. 1, 2 and 3 of Takeshita which show an optical drive system as defined in Claim 20, wherein the preferred recording speed detection module is a software program which retrieves: a parameter related to a communication link transfer speed between

the host device and the optical drive, and a parameter related to an optical drive maximum recording speed (Fig. 2; column 5, lines 30-65).

Regarding claim 22, see Figs. 1, 2 and 3 of Takeshita which show an optical drive system as defined in Claim 21, wherein the software program further determines a preferred recording speed(Fig. 2; column 5, lines 30-65).

Regarding claim 23, see Figs. 1, 2 and 3 of Takeshita which show an optical drive system as defined in Claim 22, wherein the software program further stores the preferred recording speed, and wherein the software program transmits the stored preferred recording speed to the host device (Fig. 2; column 5, lines 30-65).

Regarding claim 24, see Figs. 1, 2 and 3 of Takeshita which show an optical drive stem-adapted to select a preferred optical drive recording speed, the optical drive system comprising: means for detecting a communication link speed; means for comparing the communication link speed to an optical drive maximum recording speed; and means for writing the communication link speed in memory if the communication link speed is less than the optical drive recording speed, otherwise writing the optical drive recording speed in memory(Fig. 2; column 5, lines 30-65).

Regarding claim 25, see Figs. 1, 2 and 3 of Takeshita which show an optical drive system as defined in Claim 24, further comprising a means for returning the preferred optical drive recording speed in memory to a host device (Fig. 2; column 5, lines 30-65).

Regarding claim 26, see Figs. 1, 2 and 3 of Takeshita which show a method of selecting a preferred optical drive recording speed comprising: detecting a communication link speed;

comparing the communication link speed to an optical drive maximum recording speed; writing the communication link speed in memory if the communication link speed is less than the optical drive recording speed, otherwise writing the optical drive recording speed in memory (Fig. 2; column 5, lines 30-65).

Regarding claim 27, see Figs. 1, 2 and 3 of Takeshita which show a method as defined in Claim 26, further comprising transmitting the preferred optical drive recording speed to a host device (Fig. 2; column 5, lines 30-65).

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 5 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeshita (U.S. Patent 6,556,524) in view of Asthana (U.S. Patent 5,396,476).

With regard to claims 5 and 15, Takeshita shows all the features, except a non-volatile memory buffer. However, Asthana teaches the non-volatile memory buffer (column 6, lines 50-55). Therefore, it would have been obvious to provide Takeshita with the non-volatile memory buffer as taught by Asthana. The rationale is as follows: one of ordinary skill in the art at the time of the invention would have been motivated to provide Takeshita with the non-volatile

memory buffer as taught by Asthana, in order to store the optical drive maximum recording speed in a memory that cannot be changed.

***References Cited***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited references are all related to the optical disk drive.

***Point of Contact***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimlien T Le whose telephone number is 703 305 3498. The examiner can normally be reached on M-F 8a.m-5p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on 703 305 6137. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kimlien Le

William Korzuch

WILLIAM KORZUCH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600